

... writing linear equations when
given info.

$$y = mx + b$$

slope & y-int

① $y = 5x - 3$

② $y = -3x - 4$

③ $y = -4x$

④ $y = 4$

⑤ $y = \frac{3}{5}x + 6$

⑥ $y = -\frac{3}{4}x + \frac{7}{3}$

$y = mx + b$ slope & point

Point-slope form: $y - y_1 = m(x - x_1)$
 (x_1, y_1)

⑦ $y - 4 = 2(x - 0)$

$$y - 4 = 2x$$

$$y = 2x + 4$$

⑧ $y - 0 = 3(x - 1)$

$$y = 3x - 3$$

$$\textcircled{9} \quad y-5=0(x-6)$$

$$y-5=0$$

$$\boxed{y=5}$$

$$\textcircled{10} \quad y-3=-\frac{2}{3}(x-9)$$

$$y-3=-\frac{2}{3}x+6$$

$$\boxed{y=-\frac{2}{3}x+9}$$

$$y - y_1 = m(x - x_1)$$

$$\textcircled{11} \quad y - -2 = -\frac{4}{3}(x - 3)$$

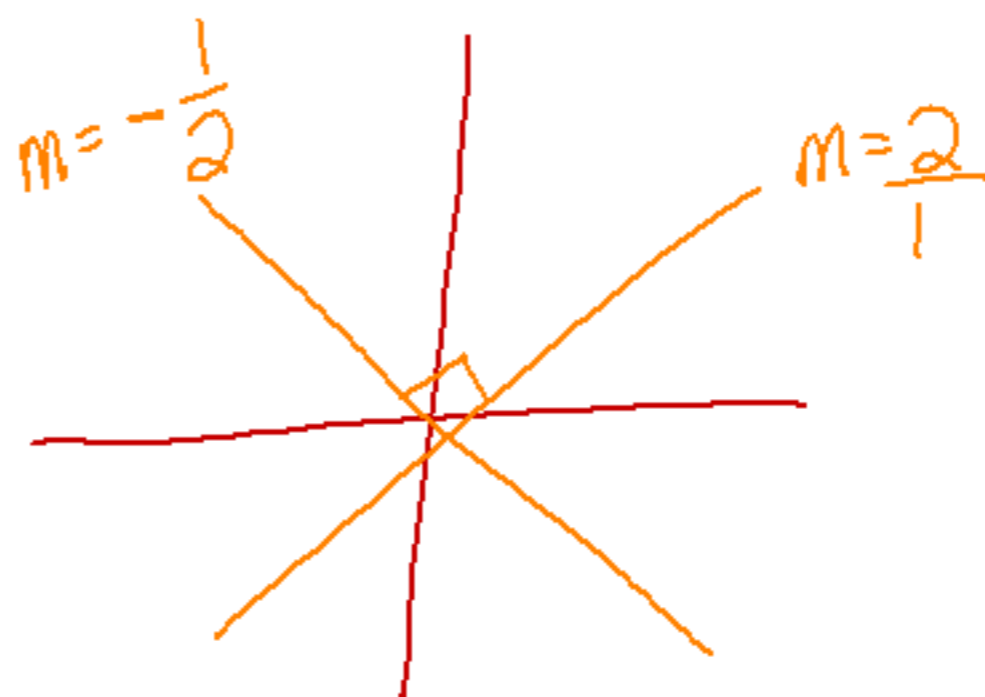
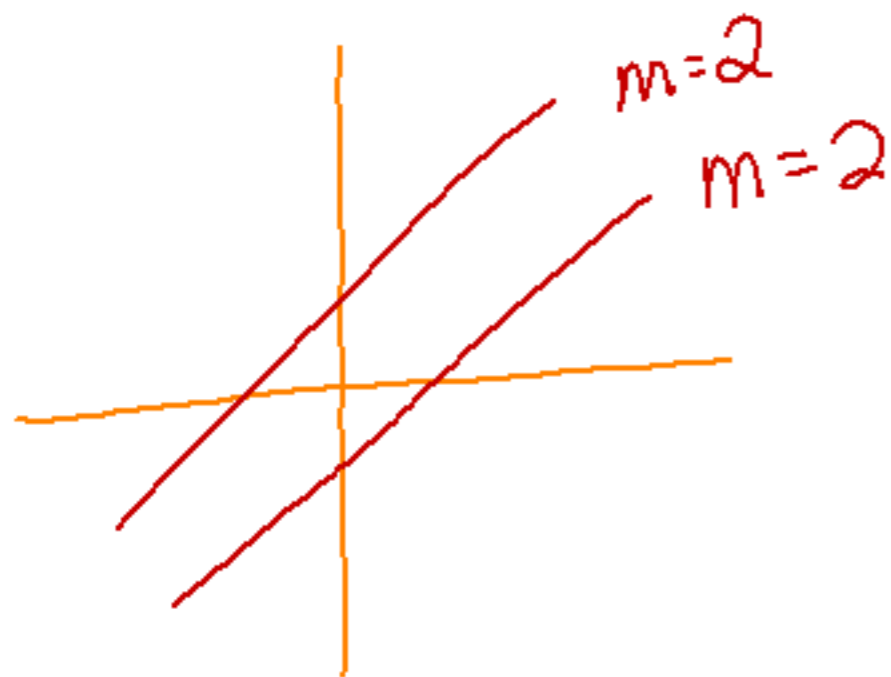
$$y + 2 = -\frac{4}{3}x + 4$$

$$y = -\frac{4}{3}x + 2$$

$$\textcircled{12} \quad y - -4 = \frac{2}{5}(x - 7)$$

$$y + 4 = \frac{2}{5}x - \frac{14}{5}$$

$$y = \frac{2}{5}x - \frac{34}{5}$$



opposite reciprocal

Ex: $m = -\frac{3}{2}$

⑬ $(4, -6) (3, -4)$

$$m = \frac{-4 - -6}{3 - 4} = \frac{2}{-1} = \boxed{-2}$$

$\perp m = \frac{1}{2} \quad (6, -10)$

$$y - -10 = \frac{1}{2}(x - 6)$$

$$y + 10 = \frac{1}{2}x - 3$$

$$\boxed{y = \frac{1}{2}x - 13}$$

⑭ $(6, -6)$ and $(10, -4)$

$$m = \frac{-4 - (-6)}{10 - 6} = \frac{2}{4} = \frac{1}{2}$$

$$// m = \frac{1}{2} \quad (4, 6)$$

$$y - 6 = \frac{1}{2}(x - 4)$$

$$y - 6 = \frac{1}{2}x - 2$$

$$y = \frac{1}{2}x + 4$$

$$\textcircled{15} \quad m = -1$$

$$// m = -1$$

$$y - -9 = -1(x - 5)$$

$$y + 9 = -x + 5$$

$$\boxed{y = -x - 4}$$

$$\textcircled{16} \quad m = -2$$

$$\perp m = \frac{1}{2}$$

$$y - 4 = \frac{1}{2}(x - 1)$$

$$y - 4 = \frac{1}{2}x - \frac{1}{2}$$

$$\boxed{y = \frac{1}{2}x + \frac{7}{2}}$$

$$\textcircled{17} y = -\frac{1}{2}x + 6$$

$$\perp m = 2 \quad (1, -1)$$

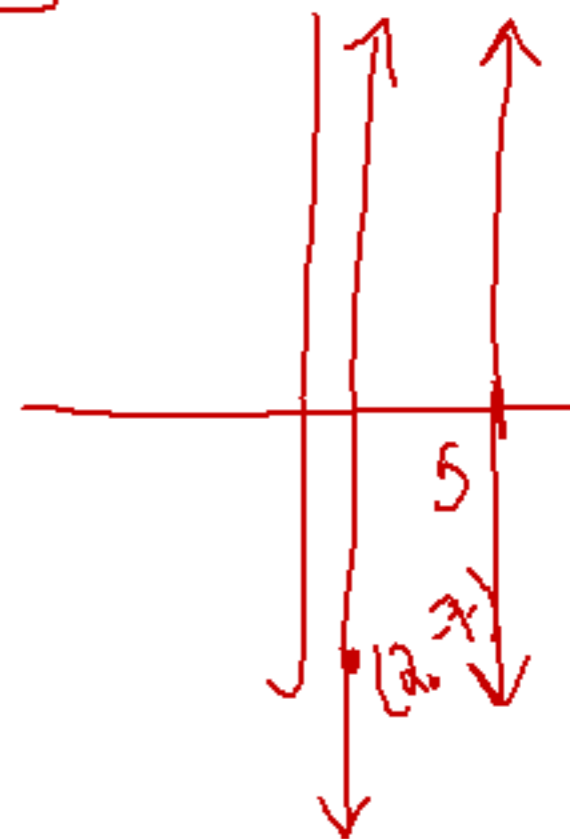
$$y - (-1) = 2(x - 1)$$

$$y + 1 = 2x - 2$$

$$\boxed{y = 2x - 3}$$

$$\textcircled{18} x = 5 \quad (2, -7)$$

$$\boxed{x = 2} \quad m = \text{undefined}$$



19) $m = -6$ $(-2, 1)$

$$y - 1 = -6(x - -2)$$

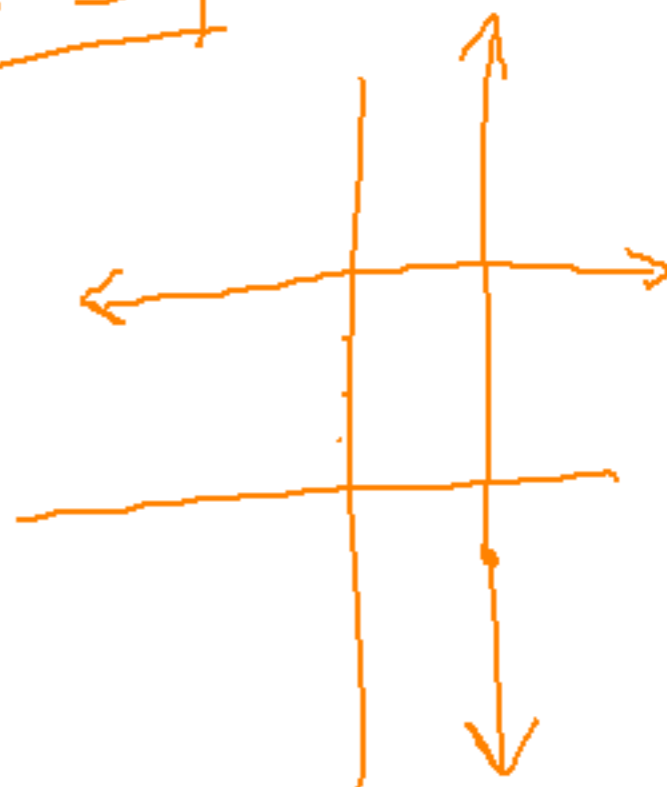
$$y - 1 = -6(x + 2)$$

$$y - 1 = -6x - 12$$

$$y = -6x - 11$$

20) $y = 4$ $(3, -2)$

$$x = 3$$



Given: 2 pts.

$$y = mx + b$$

① find slope

② pick a pt.

③ use slope & pt
in pt/slope formula

② $(8, 5)$ $(11, 14)$

$$① m = \frac{14-5}{11-8} = \frac{9}{3} = ③$$

$$y - 5 = 3(x - 8)$$

$$y - 5 = 3x - 24$$

$$y = 3x - 19$$

$$\textcircled{22} \quad (-5, 9) \quad (-4, 7)$$

$$\textcircled{1} \quad m = \frac{7-9}{-4-(-5)} = \frac{-2}{1} = \textcircled{-2}$$

$$y-9 = -2(x-5)$$

$$y-9 = -2x-10$$

$$\boxed{y = -2x - 1}$$

$$\textcircled{23} \quad m = -\frac{7}{8}$$

$$y = -\frac{7}{8}x + 1$$

$$(0, 1)$$

$$\textcircled{24} \quad m = -3$$

$$y = -3x + 6$$

$$(2, 0)$$

$$y - y_1 = m(x - x_1)$$